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**Original article**

## **Determinants of loan repayment of livestock farmers under agricultural credit guarantee scheme (A.C.G.S) in Etche local government area of rivers state, Nigeria**

**C.O.A. Ugwumba, J.T. Omojola\***

*Agricultural Economics. Anambra State University, Nigeria.*

\*Corresponding author; Anambra State University, Nigeria; Email: [omojolajoseph@yahoo.com](mailto:omojolajoseph@yahoo.com)

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ABSTRACT

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This study examined the determinants of loan repayment of livestock farmers under the Agricultural Credit Guarantee Scheme (ACGS) in Etche Local Government Area of Rivers State, Nigeria. Simple random sampling technique was used to select 126 respondents for the study. Well structured and pre-tested questionnaires were used to collect data. Collected data were analyzed using descriptive statistics and multiple regression analysis. Results showed that majority of the farmers (71.43%) were males, 52.38% were married, 95.24% had one form of formal education or the other and 42.85% realized between ₦50,000 and ₦ 100,000 annually. Loan repayment by the livestock farmers was statistically and significantly influenced by age, farming experience, delay in disbursement and interest rate. The major constraints to loan repayment in the area were delay in disbursement, high interest rates, lack of collaterals, natural disaster, pests and diseases infestation and excessive bureaucratic procedures. Policy measures such as timely disbursement of loan, introduction of concessionary interest rates, agricultural insurance scheme and broadening of extension services would mitigate the problems and ensure increase in lending capacity of the credit scheme.

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## 1. Introduction

Agriculture remains the largest sector of the economy because it employs about 70% of the nation's population especially those living in the rural areas and contributes about 40% of the Gross Domestic product (GDP) (Central Bank of Nigeria (CBN), 2007). The importance of agriculture in economic development goes beyond its contribution to growth in national income, livelihood of the rural people and meeting the national requirements of increasing population. The agricultural sector is also seen to hold the key to poverty reduction, provision of abundant and affordable food and for both domestic consumption and exportation. This ensures a highly stable economy with a low rate of inflation (Nigeria Institute of Social and Economic Research (NISER), 2003).

Livestock and their products are estimated to make up over half of the total value of agricultural output in the industrialized countries and about a third of the developing countries (Bruinsma, 2003). The global importance of livestock and their products is increasing as consumer demand in the developing countries expands with population growth and rising incomes. Apart from the importance of animal production to national income, improved human activities and foreign exchange, livestock also play an important role in contributing to rural livelihood, employment and poverty alleviation. Coppock, *et al* (2006) opined that livestock are often regarded as producers of milk and meat, income generators and reservoirs of wealth. As livestock's are sources of income and serve as security during crop failure, more attention should be given to the livestock sector in the area of feed resource improvement.

Credit plays an important role in enhancing agricultural productivity and its usefulness can not be over emphasized (Mafimisebi, *et al*, 2008). Among all the factors militating against agricultural production, credit inadequacy is a major factor that makes it difficult for the livestock farmers in developing countries to improve their production. Credit enables farmers to secure machinery, equipment, hire additional labour and expand production.

In a bid to provide sufficient credit to the agricultural sector of the economy, the Federal and state Governments have established numerous programmes and Banks including the Agricultural Credit Guarantee Scheme Fund (A.C.G.S.F). Despite the establishment of the scheme and the availability of institutional credit to farmers, some livestock farmers, usually the small scale farmers, default in loan repayment. This is attributed to problems such as deliberate attempt by borrowers to default, natural disasters, pest and diseases infestation, poor project management by farmers, poor project appraisal by banks, inadequate project monitoring by banks, untimely disbursement of funds by banks which at times encourages loan diversion (Awoke, 2004; Adejobi and Atobatele, 2008). Consequently, failure of some farmers to repay their loans makes it impossible for lenders to meet the demand of other farmers. It is on this premise that the study originates to investigate the determinants of loan repayment of livestock farmers under the ACGSF in Etche Local Government Area of Rivers State.

## 2. Materials and methods

Etche Local Government Area (LGA) is one of the 23 (LGAs) in Rivers State. The LGA has a population of about 249,939 persons (National population commission (NPC, 2006). It lies northeast of the State and has 5 clans, namely, Ulakwo Umuselen, Mba, Okehlin, Igbo Agwuru-asa and Ozuzu. It is the food basket of the state because of its fertile soils, the preponderance of production, marketing and other activities in all the sub- sectors (crops, livestock, fisheries and fprestry) of agriculture.

The study population comprises of livestock farmers that benefited from A.C.G.S.F. in the State. A total of 126 respondents were selected for the study by simple random sampling method. Twenty six respondents were selected from Okehi community and twenty five respondents from each of the rest four communities to arrive at the sample size of 126. The selections were facilitated by list of the beneficiaries of ACGSF obtained from the agricultural officer in charge of ACGSF in the LGA. .Data was collected with the aid of structured questionnaires and personal interviews. Data were collected on the respondents' socio-economic characteristics such as gender, age, marital status, and level of education, interest rate, loan volume and farming experience, source of fund and annual income; and constraints to olan repayment.

Non parametric statistical tools such as means, percentages and frequency distributions were employed to analyze data generated on socio-economic factors, sources of fund and annual incomes; and constraints to loan repayment by the livestock farmers while multiple regression analysis was used to determine the effects of socio-economic characteristics of the farmers on loan repaid. The implicit and explicit forms of the multiple regression

used to assess the relationship between amounts of loan repaid (dependent variable) and respondents' socio-economic factors (independent variables) is stated as:

$$ALR = f(INR, LOV, AGE, FAE, ANI, DED, LEI, e).$$

Where:

ALR	=	Amount of loan repaid (₦)
INR	=	Interest rate (%)
LOV	=	Loan volume (₦)
AGE	=	Age of the respondent (Years)
FAE	=	Farming experience of the respondents (years)
ANI	=	Annual income (₦)
DED	=	Delay in disbursement (dummy: Yes =1; No = 0)
LEI	=	Lending institution (dummy: formal =1; informal = 0)
e	=	Stochastic error term.

The data were fitted to four functional forms of the regression model (linear, exponential, semi-log and double-log) and tried using SPSS statistics. On the basis of economic, statistical and econometric *a priori* criteria, the estimated equation with the best fit was chosen as the lead equation. The functional forms are given as:

$$\text{Linear: } ALR = \Psi_0 + \Psi_1 INR + \Psi_2 LOV + \Psi_3 AGE + \Psi_4 FAE + \Psi_5 ANI + \Psi_6 DED + \Psi_7 LEI + e$$

$$\text{Exponential: } ALR = \Psi_0 + \Psi_1 INR + \Psi_2 LOV + \Psi_3 AGE + \Psi_4 FAE + \Psi_5 ANI + \Psi_6 DED + \Psi_7 LEI + e$$

$$\text{Semi-Long: } \ln ALR = \Psi_0 + \Psi_1 \ln INR + \Psi_2 \ln LOV + \Psi_3 \ln AGE + \Psi_4 \ln FAE + \Psi_5 \ln ANI + \Psi_6 \ln DED + \Psi_7 \ln LEI + e$$

$$\text{Double log: } \ln ALR = \Psi_0 + \Psi_1 \ln INR + \Psi_2 \ln LOV + \Psi_3 \ln AGE + \Psi_4 \ln FAE + \Psi_5 \ln ANI + \Psi_6 \ln DED + \Psi_7 \ln LEI + e$$

### 3. Results and discussion

#### 3.1. Socio-economic characteristics of the livestock farmers

The respondents' socio-economic statistics is shown in table 1. Majority (80.95%) of the livestock farmers were in the age range of 20-50 years and mostly male (71.43%). This implied that livestock enterprise in the area was dominated by energetic males in their productive age who could afford to venture into the business known to be characterized by intensive labour and risks such as pests and disease infestations, etc (Akanni, 2007). Further result of the analysis of data on socio-economic variables showed that majority (52.3%) of the respondents were married, 95.3% had one form of formal education or the other and about 61% had experience of 6-16 years in livestock farming; a development that have had positive influence on the farmers' skills, productivity and ability to repay. Chukwuji (2006) noted that success and stability of any business depends on the skill and experience of the manager while Ugwumba (2010) and Ijeoma (2010) opined that education and experience are veritable tools for acquiring new ideas and skills that bear positively on scope of enterprising, income and profit.

Table 2 shows the amount of application, approval, disbursements and repayments by the respondents. The results revealed that 20.51% of the respondents applied for loan ranging from ₦50,000 – ₦100,000, while 23.81% applied for loan ranging from ₦101,000 – ₦150,000, 30.95% applied for loan ranging from ₦151,000 – ₦200,000 and 16.67% applied for loan above ₦200,000. The loan range of ₦50,000 – ₦100,000 was approved for 47.62%, ₦101,000 – ₦150,000 (19.05%), ₦151,000 – ₦200,000 (26.19%) and ₦200,000 and above for only 7.14% of the livestock farmers. Out of these amounts approved, loan of less than ₦50,000 was granted to 11.91%, ₦50,000 – ₦100,000 (52.38%), ₦101,000 – ₦150,000 (23.81%), ₦151,000 – ₦200,000 (9.52%) and ₦200,000 and above was granted to 2.38% of the farmers. On loan repayment, the result showed that only 48 (representing 38.10%) of the respondents attempted to repay the loan granted to them out of 126 beneficiaries of loan from the credit institution. From the results, 18 respondents (representing 14.29%) repaid less than 50,000, 21 (16.67%) repaid loan ranging from ₦50,000 – ₦100,000, while 3 (2.38%) respondents each repaid loan ranging from ₦101,000 – ₦150,000, ₦151,000 – ₦200,000 and above ₦200,000. The finding agrees with Achike and Ngwa (2000), Njoku and Obosi (2001) Eze and Ugochukwu (2004), Awoke (2004), Afolabi (2010) and Onyeagocha, *et al* (2012) who independently reported discouraging repayment rates among beneficiaries of loans from lending institutions, though women fared better than men in repayment.

**Table 1**  
Socio-Economics Characteristics of Livestock Farmers.

Years of experience	Frequency	Percentage (%)
1 – 5	39	30.95
6 – 10	63	50.00
11 – 15	15	11.91
16 and above	9	7.14
Total	126	100
Household Size		
1 – 5	36	28.57
6 – 10	75	59.52
Above 10	15	11.91
Total	126	100
Interest Rate		
8%	9	7.14
10%	102	80.95
12%	15	11.91
Total	126	100
Age		
20 – 35	24	19.05
36 – 50	78	61.90
51 – 65	18	14.29
Above 65	6	4.76
Total	126	100
Educational Level		
No formal education	6	4.79
Incomplete primary school	3	2.38
Complete primary school	21	16.67
Secondary education	66	52.38
Tertiary education	30	23.81
Total	126	100
Gender		
Male	90	71.43
Female	36	28.57
Total	126	100
Marital Status		
Married	66	52.38
Single	36	28.57
Widowed	18	14.29
Divorced	6	4.76
Total	126	100

Source: Field Survey, 2013

**Table 2**

Amount of loan applications, approvals, disbursements and repayments by the farmers.

<b>Applications</b>	<b>Frequency</b>	<b>Percentage (%)</b>
N 50,000 – N100,000	36	28.57
N101,000 – N150,000	30	23.81
N151,000 – N 20,000	39	30.95
Above N200,000	21	16.67
Total	126	100
Approvals		
50,000 – 100,000	60	47.62
101,000 – 150,000	24	19.05
151,000 – 200,000	33	26.19
Above 200,000	9	7.14
Total	126	100
Disbursements		
Less than ₦ 50,000	15	11.91
₦50,000 – ₦100,000	66	52.38
₦101,000 – ₦ 150,000	30	23.81
₦151,000 - ₦200,000	12	9.52
Above ₦ 200,00	3	2.38
Total	126	100
Repayments		
Less than ₦ 50,000	15	11.91
₦50,000 – ₦100,000	66	52.38
₦101,000 – ₦ 150,000	30	23.81
₦151,000 - ₦200,000	12	9.52
Above ₦ 200,00	3	2.38
Total	126	100

Source: Field Survey, 2012.

**Table 3**

Source of funds and annual income of the livestock farmers.

<b>Source of Funds</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Commercial bank	30	23.81
Friends and relatives	18	14.29
ACGSF	45	35.71
Local money lenders	9	7.14
Cooperatives/ISUSU	24	19.05
Total	126	100
Annual Income		
₦50,000 – ₦100,000	54	42.85
₦101,000 – ₦150,000	27	21.43
₦151,000 – ₦200,000	21	16.67
₦ 201,000 – ₦ 250,000	15	11.91
Above ₦250,000	9	7.14
Total	126	100

Source: Field Survey, 2012

**Table 4**

Estimated determinants of loan repayment of the livestock farmers.

Variable	Linear	Exponential	Semi-log	Double – log
Content Constant	- 97719 (- 1.09)	- 6.054 (- 0.74)	956929 (- 2.39)	- 35.27 (- 1.27)
INR	5483 (0.73)**	-0.063 (0.01)	95431 (0.44)	-3.16 (0.21)
LOV	-0.05117 (-2.01)	-0.0000305 (-1.32)	-51678 (-1.52)	-4.026 (-7.71)**
AGE	1023 (0.68)**	0.1607 (1.18)	253093 (1.33)	19.08 (1.45)
FAE	198 (0.06)**	-02217 (-0.77)	-44049 (-0.52)	-5.258 (-0.90)
ANI	0.37205 (8.45)	0.00001245 (3.11)**	159157 (5.68)**	6.874 (-1.71)**
DED	10356 (0.76)**	3.095 (2.50)**	1411 (0.25)	0.9432 (2.39)**
LEI	-03876 (-191)	-2.269 (-1.63)	-2757 (-0.43)	-0.6143 (-1.38)
$R^{2\text{adj}}$ (adjusted)	70.2 64.1	35.8 22.6	52.5 42.7	40.2 27.9
F – Statistic	11.46	2.71	5.36	3.27
D-W- Statistic	1.92	2.42	1.52	2.38

**Source field survey:** 2012. Notes: \*\* = significant at 5% level of probability, D.W- Statistic = Durbin – Watson statistic. Figures in parenthesis are t - statistic values.

**Table 5**

Constraints to loan repayment.

Constraints	Frequency	Percentage
Delay in disbursement	60	47.62
High interest rates	36	28.57
Lack of collaterals	18	14.29
Excessive bureaucratic procedures	12	9.52
Total	126	100

Source: Field Survey, 2012

### 3.2. Sources of fund and annual income of the respondents

Table 3 presents sources of fund and annual income. It could be deduced from the table that majority (35.71%) of the livestock farmers financed their business from ACGSF loans; 23.81% from commercial banks; 19.05% from Cooperative/ Isusu; 14.29% from friends and relatives while only 7.14% sourced money from local money lenders. High interest rate might have made it difficult to obtain loans from local money lenders. Furthermore, the table revealed that most (64.28%) of the livestock farmers realised between ₦50,000 – ₦150,000 as their annual income while the remaining 35.72% earned N151, 000 and above. This may be attributed to the commercial and administrative nature of the study area.

### 3.3. Determinant of amount of loan repaid

The influence of socio-economic characteristics of the livestock farmers namely interest rate, represented by (INR), loan volume (LOV), age (AGE), farming experience (FAE), annual income (ANI) delay in disbursement (DED) and lending institution (LEI) on amount of loan repaid (ALR) was assessed using the multiple regression analysis. Collected data were fitted to the four functional forms (linear, exponential, semi-log and double – log) of the regression model and ran with MINITAB STATISTICS. Outputs of the analysis are presented in table 4. On the basis of economic, statistical and econometric *a priori* criteria, the linear form output gave the best result in terms of signs and significance of the regression parameters and was chosen as the lead equation.

Out of the seven regressors, four (age, farming experience, delay in disbursement and interest rate) were statistically significant at 5% level of probability while the other three (lending institution, loan volume and annual income) were not significant. Age of the livestock farmers had a positive and statistically significant influence on amount of loan repaid at 5% level of probability. The reason might be that older farmers have been into the business for a longer period of time which enabled them to accumulate more years of experience. Farming experience of the respondents had a co-efficient that is significant at 5% level of probability and is positive. This implied that the more the numbers of years of experience in livestock production, the better the ability to manage the farm and accessibility to agricultural credit.

Delay in disbursement indicates positive sign and statistically significant at 5% level of probability. The implication of this is that untimely disbursement of funds by banks at times encourages loan diversion to other unproductive uses.

Interest rate has a coefficient which is statistically significant at 5% level of probability and is positive. This implied that high interest rate and short time nature of loans with fixed payment periods do not suit annual cropping and thus constitutes a hindrance to repay credit. This agrees with results of Philip, Nkonya, Pender and Oni (2008) in their study on constraints to increasing agricultural productivity in Nigeria; and Ugwunba and Omojola (2012) in their work on credit access and productivity growth among subsistence food crop farmers in Ikole Local Government Area of Ekiti State, Nigeria who noted high interest rate as one of the major constraints to credit access and productivity growth.

The table further reveals a negative relationship between lending institution, loan volume and annual income. This means that loan default reduces the lending capacity of a financial institution. This corroborates the work done by Onyeagocha et al (2012), on loan operational method as critical factor in repayment performance of microfinance institution in South East States of Nigeria.

The coefficient of multiple determination ( $R^2$ ) is 70.2 which implied that 70% of the variation in loan repayment of livestock farmers were explained by the explanatory variables included in the model while the remaining 30% was as a result of residual error. The Durbin-Wats statistic value of 1.92 which lies within the bench mark of 2.3 shows the absence of autocorrelation. Overall, the regression is significant as the F-statistic value of 11.46 is statistically significant.

The major constraints (tables) to obtaining loan from credit source in the study area were delay in disbursement (47.62%) high interest rates (28.57%) lack of collaterals (14.29%) excessive bureaucratic procedures (9.52%).

#### 4. Conclusion

Livestock farmers in the study area accessed loans from the Agricultural Credit Guarantee Scheme Fund for their production activities. However, amount of credit accessed and level of repayment were limited by certain constraints: such as delay in disbursement, high interest rate, lack of collaterals and excessive bureaucratic procedures. Addressing the constraints to access and repay credits from the scheme, identified by this study through simplifying the schemes credit administration to ensure early disbursement of loans, monitoring and training of farmers towards proper utilization of acquired loans and availability of credit facilities with low interest rate and zero collaterals would encourage farmers and improve the performance of the scheme.

#### References

- Achike, A.I., Ngwa, D.B., 2000. Gender Discrimination in the Procurement and Repayment of Small-Scale Loan in Cameroon. In Ogbazi, N.J., Azikiwe, U. and Ifelunni, I (eds), in the Conference on Studies in Gender Discrimination in the 21<sup>st</sup> Century. University of Nigeria. Pp 253 – 256.
- Adejobi, O., Atobatele, J.T., 2008. Analysis of Loan Delinquency among Small Scale Farmers in Southern Nigeria: Application of Logit and Loan Performance Indices. *East African Agricultural and Forestry Journal*, 4 (3), 73-75.
- Afolabi, J.A., 2010. Analysis of Loan Repayment among Small-Scale Farmers in Oyo State, Nigeria *Journal of Social Sciences*, 22 (2), 115- 119.
- Akanni, K.A., 2007. Effect of Microfinance in Small Scale Poultry Business. In South-Western Nigeria. *Journal of Food and Agriculture* 19(2), 38-47.

- Awoke, M.U., 2004. Factors Affecting Loan Acquisition and Repayment Patterns of small-holder Farmers in Ika north-east of Delta State Nigeria. *Journal of sustainable Tropical Agricultural Research*, Volume 9, pp 61-64
- Bruinsma, J., 2003. *World Agriculture Towards 2015/2030 and FAO (Food and Agricultural Organization) Perspective*. London Earthscan.
- Central Bank of Nigeria CBN, 2007. Domestic Output. CBN Statistical Bulletin, Abuja, Nigeria CBN, Publication.
- Chukwuji, C.O., 2006. Factor Productivity and Technical Efficiency in Delta State, Nigeria. Ph.D Dissertation, Delta State University, Abraka, Nigeria.
- Coppock, D.L., Desta, S., Tezerra, S., Gberu, G., 2006. An Innovation System in the Range Lands Using Collective Action to Diversify Livelihoods among Settled Pastoral Women in Ethiopia. Paper Presented at Innovation African Symposium, November 21 – 23, 2006. Held in Kampala, Uganda.
- Eze, C.C., Ugochukwu, A.I., 2004. Evaluation of Women Access of Agricultural Credit in Imo State, Nigeria. *A. M.S.E. Modeling Organization, France*, 25 (23), Pp 62-65.
- Ijeoma, J.C., 2012. Adoption of Improved Snail Production Techniques by Farmers in Ohafia Agricultural C.O.A Ugwumba (eds.) *Proceedings of International Agricultural Conference, ANSUIAC, Nigeria*. Pp 114-123.
- Mafimisebi, T.E., Oguntade, A.E., 2006. Trend Performance in Credit Financing of Rural Business Activities in Nigeria: A Case Study of Community Banks in Ibadan, Oyo State. *International Journal of Agriculture and Rural Development*, 7(1), 50-60.
- Mafimisebi, T.E., Oguntade, A.E., Oni, O.E., 2008. A Perspective on Partial Credit Guarantee Schemes in Developing Countries: The Case of the Nigerian Agricultural Credit Guarantee Scheme Fund (ACGSF): A Paper Presented at a World Bank Conference at Washington D.C., March 13- 14, 2008, 2-4.
- National Population Commission NPC, 2006. National Population Commission Publication, Abuja, Nigeria 2006.
- Nigerian Institute of Social and Economic Research (NISER) 2003. *A Review of Nigerian Development: The Agricultural Sector* Report by the Agricultural and Rural Development Department, NISER Pp. 22.
- Njoku, J.E., Obosi, P.C., 2001. Loan Repayment and its Determinants Under the ACGSF in Imo State Nigeria. *African Review of Money, Finance and Banking* 2 (2).
- Onyeagocha, S.U.O., Chidbelu, S.A.N.D., Okorji, EC; Nwosu, F.O., Elirim, N.C., 2012. Loan Operational Method as Critical Factor in Repayment Performance of Microfinance Institution in South-East of Nigeria. *International journal of Applied Reseach and Technology*, 1(4), 158-169.
- Philip, D., Nkonya, E., Pender, J., Oni, O.A., 2008. Constraints to Increasing Agricultural Productivity in Nigeria. A Review of Nigeria Strategy Support Programs (NSSP). Background Paper No. NESS 006, Washington D.C. International Food Policy Research Institute.
- Ugwumba, C.O.A., 2010. Analysis of the Agribusiness of Catfish Marketing for Poverty Alleviation and Women Empowerment in Anambra State, Nigeria: In R.N. Okoh (ed) *Engineering Policy for Attainment of Millennium Development Goals*. Proceeding of 1st Annual National Conference of Centre for Human Resource and Services, Asaba, Nigeria. Pp. 89-98.
- Ugwumba, C.O.A., Omojola, J.T., 2012. Credit Access and Productivity Growth among Subsistence Food Crop Farmers in Ikole Local Government Area of Ekiti State, Nigeria, *ARPN Journals*.